

# Consultation and Referral Patterns of Family Physicians

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A one-month study of all consultations and referrals to medical specialists and other community resources made by 39 family physicians was undertaken in London, Ontario, in the spring of 1975. Eight physicians were in practice in the community and 31 were staff physicians or residents in family medical centers associated with the Department of Family Medicine of the University of Western Ontario, London. Rates of referral per 100 office visits are calculated and examined according to physician experience and location of practice. The reasons given for referral and for choosing the specific consultant or agency are also analyzed. Referral rates are compared with previous studies.

Primary Care physicians provide health care to patients in many ways. One of these is referral to other physicians and community resources. In this study, the following questions concerning consultation and referral patterns are asked: Do less experienced physicians call for help sooner or more often? Do more experienced physicians use community resources less often than recent graduates who have been taught more about the resources available? Do the reasons for referral vary according to the kind of problem? How does a physician choose the specific consultant? Are there differences in referral rates or reasons for referring in physicians who have been in family medicine programs compared with those who have had the traditional internship and, sometimes, extra training?

For the purposes of this study, the term *referral* is defined as a request for the services of another person (physi-

cian or otherwise) including a permanent or temporary transfer or sharing of responsibility for a patient's care. The term *consultation*, meaning a request for an opinion of another physician, is thus included in *referral*. Community resources in this study include public health nurses, social workers, physiotherapists, dieticians, psychologists, dentists, lawyers, and community agencies, such as the Addiction Research Foundation, Welfare Department, Legal Aid, etc. The public health nurses, psychologists, and social workers working within family medical centers were included in "community resources." This study of referral patterns of family physicians was carried out in London, a city of 250,000 persons in southwestern Ontario.

There are patient, physician, and community variables in the process of referral. A review of the literature showed that very little work has been done in the area of physician factors. Most research has been related to patient factors such as age, sex, socio-economics, and personality (Penchansky).<sup>1</sup> The community variables relate to what is available in a particular

community. Williams,<sup>2</sup> who studied family physician referrals to a university clinic with respect to physician and patient factors, observed that almost 50 percent of referrals were patient-initiated. Villaires<sup>3</sup> studied the extent of use of community health facilities but did not investigate the reason for referral. In this paper, the author has pursued the study of physician factors. There were three objectives of the major study:

1. To determine the rates of referral per 100 office visits by various groups of physicians. The individual physician could be given his own rates in comparison with his group and the total group of physicians. The denominator of 100 office visits allows comparison with the literature.
2. To describe reasons for referral by physician groups to three groups of consultants (medical specialists, surgical specialists, and community resources).
3. To describe reasons for choosing the specific consultant or resource.

## Method

Participating physicians completed a questionnaire for every referral occurring during the study month.

## Questionnaire Development

The author incorporated her own ideas with some from the literature in developing a trial questionnaire. Also, a sample of physicians at one teaching family medical center stated several reasons for referring patients and how they choose the individual or agency they refer to. Two formats of questionnaires were used alternately by physicians at the Family Medical Center over a one-week period in early March 1975. Comments and criticisms

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**Figure 1. Questionnaire – Consultations**

Please fill out this form every time a consultation is made from the office, emergency, or home – during office hours, at night, or on the weekends.

Patient's Name \_\_\_\_\_ F.M.C. # \_\_\_\_\_ Birth Date \_\_\_\_\_ Sex M \_\_\_\_\_ F \_\_\_\_\_  
 (where applicable)

Physician's Name (or number) \_\_\_\_\_ Date \_\_\_\_\_

Problem(s) ie, consultation re: \_\_\_\_\_

**Consult to:**

Consultant (specify) \_\_\_\_\_

Public Health Nurse . . . . .

Social Worker . . . . .

Dietician . . . . .

Physiotherapist . . . . .

Other Community Resource (specify) \_\_\_\_\_

**How consult was made (✓) one or more**

Appointment made by phone . . . . .

Personal contact with consultant . . . . .

Note - Letter . . . . .

Other . . . . .

**Reasons for consultation** - Please make a judgment with *each* reason and place an appropriate (✓) (**Imp** = important)

	Not Imp	Slightly Imp	Imp	Very Imp	Can't Answer
Patient or family requests consult or always has in past . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apparent loss of rapport or trust . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of required facilities and/or skill . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second opinion for diagnosis . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second opinion for management . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medicolegal reasons . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of time to deal with problem appropriately . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For re-assessment . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Reasons for choosing specific individual or resource:** (✓) one or more

Patient saw this person before . . . . .

Patient or family requested . . . . .

Recommended by respected colleague . . . . .

Good past experience for other patients . . . . .

Have worked with this person . . . . .

Have met - liked this person and his/her approach . . . . .

Of all the capable persons, he/she can see the patient soonest . . . . .

**Table 1. Background of 39 Participating Physicians**

<b>Family Medical Centre Based - 31</b>	
First-year residents	9
Second-year residents and teaching fellows	12
Staff Physicians	10
<b>Community Based - 8</b>	
<5 years in practice	6
5 years + in practice	2
or	
<b>Family Medicine Training</b>	<b>27</b>
<b>Traditional Training</b>	<b>12</b>
<b>Total</b>	<b>39</b>

led to the format that was used in the one-month study (Figure 1).

*Participating Physicians*

Participation was voluntary. Ten out of eleven full-time staff physicians with the University of Western Ontario Department of Family Medicine and their residents participated. Some selection of community family physicians occurred in that the author sent letters to ten community physicians who were felt to be cooperative. Only two community physicians did not wish to participate. The composition of the group of physicians finally involved is given in Table 1.

The 27 physicians with training in family medicine include those with partial training (three or more months), ie, 21 residents and teaching fellows, and six who have completed that training (two staff physicians and four in the community).

*Pilot Study and Establishing Method of Analysis*

The first week of questionnaires were returned by mail to check for problems or errors in completion and to ensure that a four-week study period would return a large enough number of questionnaires. Also, the first-week period may have encouraged the physicians to remember to complete the forms at every referral. Patient and physician confidentiality was maintained in compiling the data. The name of the patient was used only to obtain missing age-sex data from physicians' offices. The data were transferred from questionnaires onto edge-punch cards. The edge-punch cards allowed quick calculation of individual and group rates of referral. Also, the cards enabled the author to cross-tabulate items of interest. Through the pilot study, it was found important to add information on

**Table 2. Rates of Referral per 100 Office Visits by Physician Group**

Physician Group	Number of Physicians	Total Office Visits	Referral Rates to:				Total Referrals per 100 Office Visits
			Medical Specialists (Referrals/100 visits)	Surgical Specialists (Referrals/100 visits)	All Specialists (Referrals/100 visits)	Other Community Resources	
First-Year Residents	9	860	1.2	2.0	3.1	1.2	4.3
Second-Year Residents	12	1,572	1.6	2.2	3.8	1.0	4.7
Staff Physicians	10	1,597	1.5	1.8	3.3	0.6	3.9
Total Family Medical Centre Based	31	4,029	1.5	2.0	3.4	0.9	4.3
< 5 years in community	6	3,351	2.3	2.4	4.7	1.2	6.0
5 years + in community	2	1,236	4.1	2.8	6.9	0.7	7.5
Total Community Based	8	4,587	2.8	2.5	5.3	1.1	6.4
Family Medicine Training	27	4,926	2.0	2.3	4.3	1.3	5.6
Traditional Training	12	3,690	2.5	2.1	4.6	0.5	5.2
All Physicians	39	8,616	2.2	2.2	4.4	1.0	5.4

\*p<0.01 by Chi-square test

\*\*p<0.001

n.s. — not significant

**Table 3. Physician Reasons for Referral**

Important Reason for Referral	Important in Referral to:			Total % of n = 465
	Medical Specialists	Surgical Specialists	Other Community Resources	
	% of n = 190	% of n = 194	% of n = 81	
Second opinion for management	69	78	62	72
Lack of required facilities and/or skill	59	65	58	62
Second opinion for diagnosis	51	54	9	45
Patient or family request	29	18	14	22
Medicolegal	13	12	23	14
Re-assessment	15	3	11	9
Lack of time	8	3	36	11
Loss of rapport or trust	4	3	2	3
Other	3	1	5	2

**Table 4. Importance of Reasons for Choosing the Individual or Agency**

	Important in Referral to:			Total % of n = 465
	Medical Specialists	Surgical Specialists	Other Community Resources	
	% of n = 190	% of n = 194	% of n = 81	
Good past experience for other patients	55	78	73	68
Have met and liked this person	32	47	20	36
Have worked with this person	28	43	19	33
Of all those capable, he/she can see the patient the soonest	19	16	11	17
Recommended by respected colleague	17	14	10	15
Patient saw this person before	16	11	10	13
Patient or family requested this person	12	8	10	10

physician training and to separate specialists into medical and surgical orientation for analysis. The "medical" specialists included internists, dermatologists, allergists, psychiatrists, pediatricians, ophthalmologists (most referrals were for refraction), and obstetricians. The "surgical" specialists included general surgeons, orthopedic surgeons, otolaryngologists, and gynecologists. The majority of obstetrical problems were medical and the majority of gynecological problems were surgical, but there was some cross-over.

*Four-Week Study*

The author did not find errors of completion in the 465 questionnaires returned. Missing data were obtained and all could be included in the study. Statistical significance was assessed by the Chi-square test on the raw numbers of referral and visits from which the rates were determined.

**Results**

*Rates*

In Table 2, the rates are calculated from the number of referrals and the total number of office visits. The most significant differences are the total referral rates for community physicians: for the less experienced physicians the rate was 4.3 per 100 office visits, while for those with more than five years experience it was 6.4 per 100. The referral rate to community resources is significantly lower for traditionally trained physicians (0.5) than for those with family medicine training (1.3). The referral rate to specialists is lower for younger community-based physicians than for those with five years or more in the community. Also, it is slightly lower for family medicine trained physicians than for those with traditional training.

*Reasons for Referral*

Reasons for referral that were checked as important or very important were included in the tabulation of Table 3. The three most frequent reasons for referral were second opinion for management, lack of required facilities or skill, and second opinion in diagnosis. Requests for reassessment are more often important in referring to medical specialists than surgical specialists.

## Reasons for Choosing the Specific Consultant or Agency

More than one reason could be checked for each referral. The three most frequent reasons for choosing where to refer the patient to are identified in Table 4: "good past experience for other patients," "have met and liked this person and their approach," or "have worked with them."

## Other Observations

Family Medical Center based physicians more often sent an accompanying note or letter about the patient than did other physicians. Also, they made more check marks on the last section of the questionnaire (Figure 1) than traditionally-trained physicians. This may be related to the greater number of forms to be filled out at university centers or the possibility that traditionally-trained physicians are more decisive.

Under "Reasons for Referral," one physician checked medicolegal as being important or very important in 88 percent of his referrals. If his data were excluded, medicolegal reasons were rarely important in referral.

## Discussion

### Rates of Referral

Table 5 furnishes an idea of how the rates in this study compare with others to date. Wolfe and Badgley<sup>4</sup> do not give details of the determination of a much higher rate of 16 referrals per 100 patients seen. They do, however, state that those who have been in practice longer have higher referral rates than those family doctors who are recently established. In this study, such differences are not evident when comparing family medical center staff physicians to residents; however, there is a significantly higher referral rate for the more experienced community physicians than for those with less than five years' experience. There was a significantly higher rate of referral to specialists by community based physicians than by family medical center based physicians. Traditionally-trained physicians referred more often than those with some family medicine training.

There may be an ideal range of referral rate for the best quality of

Table 5. Comparison of Rates of Referral

Source of Information	Referral Rate per 100 Office Visits to:			
	Medical Specialists*	Surgical Specialists**	All Specialists	Specialists & Other Community Resources
Australia (Elliott <sup>7</sup> )	2.0	1.4	3.4	
Michigan (Penchansky <sup>1</sup> )			4.7	
Rochester, NY (Metcalf <sup>6</sup> )			2.2	
Saskatchewan 1965 (Wolfe <sup>4</sup> )			16	
London, Ontario (present study)	2.2	2.2	4.4	5.4
National Ambulatory Medical Care Survey — USA (DeLozier <sup>8</sup> p 40)			2.7	
British Morbidity Survey (Royal College <sup>9</sup> p 185)			12.8	13.7
California (Geyman <sup>5</sup> ) (office and hospital visits included)			1.89 (Feb)	
			1.36 (May)	
*Includes internists, dermatologists, allergists, psychiatrists, pediatricians, ophthalmologists, and obstetricians.				
**Includes general surgeons, orthopedic surgeons, otolaryngologists, and gynecologists.				

Table 6. Referrals to Specialties

	Numbers	Percent of 384 Referrals	Geyman <sup>5</sup> Percent of 126 Referrals	Metcalf <sup>6</sup> Percent of 102 Referrals
Obstetrics and gynecology	71	18	12	11
General surgery	51	13	21	25
Ophthalmology	49	13	11	6
Internal medicine	41	11	6	3
Otolaryngology	32	8	2	10
Orthopedics	28	7	16	10
Pediatrics	23	6	—	1
Dermatology	20	5	—	9
Urology	18	5	8	8
Neurology	7	2	6	8
Others	44	11	18	12

health care but this is unknown to date. Measures of the quality of care are not readily available. However, it is known that referring a patient costs more, ie, \$28 to \$42 versus \$7 to \$16 for office visits in Ontario, and to that end, the lower referral rate of family medical center based and younger physicians is preferable. Wolfe and Badgley<sup>4</sup> postulate that less experienced physicians are less confident and hesitate to have their professional peers see patients they have been managing. Or are they interested in spending extra time on complex problems? Are the more experienced physicians too pressed for time to deal with complicated problems, or are they more able to say, "Someone more up-to-date should handle this, and I will learn from the consultant's management of this problem"? Where does the physician's anxiety lie? Older physicians do have older patients who tend to have more complex medical problems. Young physicians may be more comfortable with new techniques (such as IUD insertion) and would not refer such patients.

In their study, Geyman et al<sup>5</sup> looked at a seasonal variation in referral rates and at the effect of geographic location and practice setting. They did find a decrease in referral rate from February to May but not many differences in the other areas. Unfortunately, the present study only included one month. Since the present study was undertaken in one city only, differences in referrals are not due to variations in community resources. One can, however, comment on the frequency of different specialists as Geyman has done. Table 6 lists in descending order the six most frequent specialties referred to, and comparisons are drawn with Geyman's<sup>5</sup> and Metcalfe and Sischy's<sup>6</sup> results. Some of the differences must be due to variations in resources in the different places (eg, availability, numbers, location). Also, health insurance is almost 100 percent prepaid in Ontario, and this may increase the readiness to refer.

Looking at referrals to community resources alone, we see that the only area of significant difference occurs between those referrals by family medicine trained physicians and those by traditionally-trained physicians. Much of family medicine training is done in the community with ambula-

tory patients, whereas traditional training is hospital-based. Is the difference in rates due to greater knowledge of and familiarity with community resources, or is it due to the fact that there are social workers and public health nurses attached to family medical centers? Perhaps undergraduate training is improving in the area of community resources. At any rate, community resources generally cost less than other resources. Again, it is impossible to measure the quality of care but lower cost is a factor worth considering in care today.

### *Reasons for Referral*

Basically this study describes in order of frequency of importance physician reasons for referral.

### *Reasons for Choosing the Specific Consultant or Resource*

An attempt was made to correlate the "Reasons for Referring" with the "Reasons for Choosing the Consultant." As expected, referral for reassessment occurred when the patient had seen the consultant before. If there was an apparent loss of rapport or trust in the primary care physician, the specific consultant was often chosen because the patient had requested him. It may be that this request by the patient was interpreted by the physician as loss of rapport. Other significant information did not come from correlating Tables 3 and 4.

### **Conclusions**

Differences in rates of referral per 100 office visits have been determined according to different physician backgrounds. The average rates of referral for the whole group of 39 physicians were 4.41 referrals per 100 office visits to specialists and 1.0 referrals per 100 office visits to other community resources, making a total referral rate of 5.41 per 100 office visits. The study also describes the physicians' reasons for referral and reasons for choosing the person or agency referred to. Both of these areas appear to indicate minimal variability in the most and least common reasons stated by individual physicians.

It is hoped that this study will help physicians answer questions about their own consultation and referral patterns. An interesting area for further study would include looking at the types of problems referred related to the reasons for referral and reasons for choosing the specific consultant. A follow-up study of these individual physicians in five or ten years as to whether their referring practices altered over time would give more information on the effect of experience. Also, a prospective study of what the patient and physician expectations are at the time of referral compared with what actually happens is needed to increase our understanding of the referral process and how to improve it.

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